



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,533	09/24/2003	Jeffrey A. Lucas	61605US003	4631
32692	7590	06/18/2007	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY			CECIL, TERRY K	
PO BOX 33427			ART UNIT	PAPER NUMBER
ST. PAUL, MN 55133-3427			1723	
NOTIFICATION DATE		DELIVERY MODE		
06/18/2007		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LegalUSDocketing@mmm.com
LegalDocketing@mmm.com

Office Action Summary	Application No.	Applicant(s)	
	10/669,533	LUCAS ET AL.	
	Examiner	Art Unit	
	Mr. Terry K. Cecil	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 02 April 2007.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-5,8,12-17,21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-5,8,12-17,21 and 22 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION***Claim Rejections - 35 USC § 103***

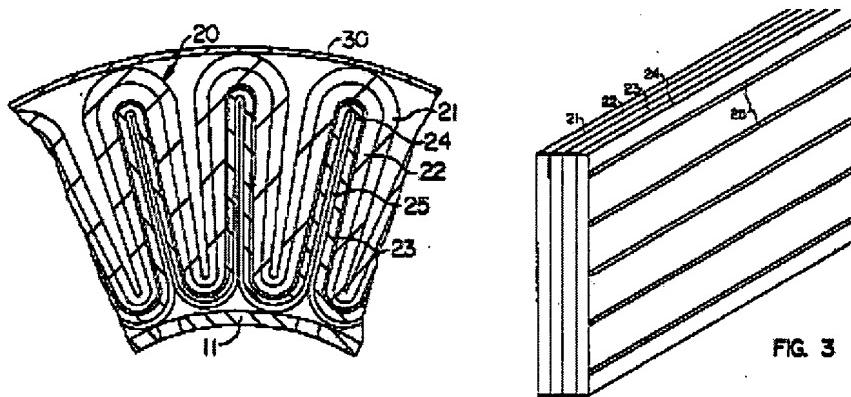
1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. Claims 1-4, 12-14, 16-17, and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (U.S. 5,552,048) in view of Rasmussen (U.S. 3,954,933).

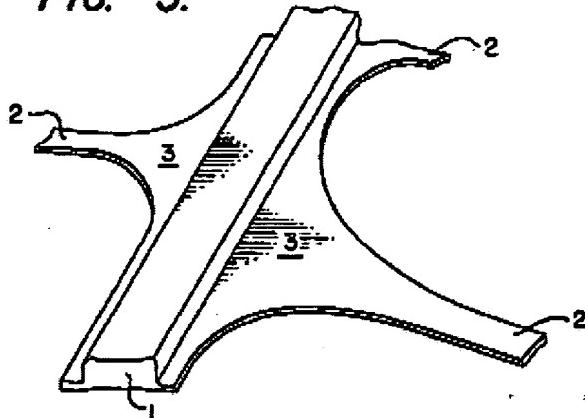


Miller teaches a filter element including a filter media 23, an upstream support 21 and a multi-layer downstream support 22 and 24 (note that the cushioning layer can be between the filter layer and either of the upstream and downstream supports, see col. 4, lines 17-21). The second downstream support layer 24 includes "ribs" 25 [as in claims 1, 12, 13 and 22]. The cushioning

layer (or first downstream support, see col. 8, lines 42-45) is a thin, highly porous, nonwoven, polyester layer made by a wetlaid process (col. 5, lines 29-46) [as in claims 14 and 16-17]. The examiner considers such a layer made by the same process and material disclosed by the applicant and having a thickness less than 100 microns yet being highly porous as having its surface contact points "minimized". As shown in e.g. figures 1 and 6, the filter element includes a perforated core, an outer cage and end caps [as in claims 13 and 21]. The filter media is pleated to have longitudinally-extending, radial pleats [as in claims 2-3].

Although Miller teaches his second downstream support can be *any* woven or nonwoven material (col. 4, lines 39-40) and cites an extruded, apertured, polymeric, mesh having "ribs" 25 as an example, he doesn't mention the layer being an extruded apertured film. However, such is taught by Rasmussen (U.S. 3,954,933). As shown in figure 5 below and also figures 2-3,

FIG. 5.



Rasmussen teaches a layer comprising an extruded, apertured, polymeric film having ribs 1 and portions 2, 3 between apertures [as in claims 1, 13 and 22]. It is considered that it would have been obvious to one ordinarily skilled in the art at the time of the invention to have at least the second

downstream support layer of Miller to be the film layer of Rasmussen, since Rasmussen teaches the benefits of a reinforcement that is thin, strong, and inexpensive and that *can be used in filters* (col. 1, lines 8-13). The ribs maintain a gap when the media is folded onto itself.

Art Unit: 1723

As for naming the filtration media “microporous membrane” and the limitation of claim 4, Miller teaches the filter media can be in the form of a membrane (col. 5, line 52). He also teaches that the membrane can be *any pore size* (col. 5, lines 58-59) but does not specifically teach a microporous membrane having a pore size of about 0.1 to about 10 microns. However, such would have been obvious to the skilled man depending upon the nature of the fluid being filtered, the nature and size of the contaminants in the fluid, and the acceptable pressure drop across the filter element—as taught by Miller (col. 5, lines 47-50).

As for the limitation in claim 1 describing the first downstream pleat support layer a “spunbound” material, such is taken as being a product-by-process limitation. Applicant is reminded that the patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Miller describes the material for his first downstream layer as being a nonwoven, made by a wetlaid process. The nonwoven is taken as being the same as the applicant’s. Alternately any structural differences resulting from the other well known process of spunbound is considered to be obvious.

3. Claims 5, 8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Miller in view of Kawano et al. (U.S. 6,808,553). These claims add the limitations of a filter media of Teflon (PTFE), among others and the nonwoven support layer being laminated to the media. Kawano teaches a polyester, nonwoven, support layer laminated to a PTFE filter

media (col. 1, lines 32-33; col. 4, lines 30-44). It is considered that it would have been obvious to one ordinarily skilled in the art at the time of the invention to have the first downstream support layer of Miller to be laminated a PTFE filter media, since Kawano teaches the benefit of such a laminate exhibiting a high collection efficiency compared with a glass fiber medium under the same pressure loss (col. 1, lines 32-35).

Response to Arguments

4. Applicant's arguments filed 4-2-2007 have been fully considered but they are not persuasive because of the following reasons:

- Applicant's arguments concerning the relative ages of the references is unconvincing since what is relevant is the prior art that existed at the time the invention was made.
- Despite applicant's remarks to the contrary, the claims are not limited to having ribs only on one side because applicant's transition word—comprising—is open ended and because of the inclusion of “at least one”.
- Rasmussen was relied upon for his teaching of an extruded apertured film having ribs. The ribs of Miller have the ability to maintain a gap.
- The Examiner contends that Rasmussen's teachings of a reinforcement that is thin, strong, and inexpensive and that *can be used in filters* is sufficient motivation for modifying Miller and that a *prima facie* case of obviousness has been established.
- Applicant's claims do not require adjacent ribs to nest, as argued.

Art Unit: 1723

5. Contact Information:

- Examiner Mr. Terry K. Cecil can be reached at (571) 272-1138 at the Carlisle campus in Alexandria, Virginia for any inquiries concerning this communication or earlier communications from the examiner. Note that the examiner is on the increased flextime schedule but can normally be found in the office during the hours of 8:30a to 4:30p, on at least four days during the week M-F.
- David R. Sample, the examiner's supervisor can be reached on 571-272-1376, if attempts to reach the examiner are unsuccessful.
- The Fax number for this art unit for official faxes is (571) 273-8300.
- Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Mr. Terry K. Cecil
Primary Examiner
Art Unit 1723

TKC
June 9, 2007